

menopause symptoms in Brazil. **METHODS:** A total of 12,000 individuals' (age 18+) self-reported data were collected from 2011 National Health and Wellness Survey (NHWS) in Brazil. QOL was measured by the physical component score (PCS) and mental component score (MCS) of the Short Form-12 (SF-12) (mean score of 47.2 for general population). Loss of work/productivity was measured by the validated Work Productivity and Activity Impairment instrument. Medical resource utilization was measured by healthcare provider, emergency room visits and hospitalization in the past 6 months. **RESULTS:** Among all women, 825 (13.8%) had completed menopause and 1,016 (20.8%) were currently experiencing symptoms of menopause. Average age for women currently experiencing symptoms of menopause was 49.6 years. Compared to the non-menopause group, those experiencing symptoms reported more co-morbidities (sleep difficulties 35%, insomnia 33%, depression 29%, high blood pressure 25%, high cholesterol 22%, arrhythmia/cardiac arrhythmia 17%), lower mean PCS scores (47.3 vs. 50.3), more patients visited general practitioners (56% vs. 49%), and higher mean number of visits (5.9 vs. 5.1) were observed over the past 6 months. Furthermore, those experiencing menopause symptoms reported greater impairment in daily activity (28%) compared to the non-menopause group (22.7%). All comparisons were statistically significant at  $p < 0.05$ . **CONCLUSIONS:** Results from the Brazil NHWS indicate women currently experiencing symptoms of menopause suffer from impairment in QOL, work/productivity loss, greater usage of healthcare resources and more co-morbidities. Findings indicate there is still an unmet medical need in menopause patients in Brazil.

#### PIH62

##### OVER-THE-COUNTER MEDICATION USE AND ITS IMPACT ON QUALITY OF LIFE OF THE ELDERLY

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**OBJECTIVES:** Use/misuse of over-the-counter (OTC) medications may cause adverse drug events (ADEs), more so ever in the elderly population. The study evaluated the direct and indirect effects of OTC medication use/misuse and associated ADEs on Health related quality of life (HRQoL) in elderly using a Structural Equation Modeling (SEM) approach. **METHODS:** A cross-sectional study was conducted using retrospective data, collected from elderly patients in Houston, Texas. Cronbach's' alpha and principal factor analysis was used to evaluate internal consistency and factor validity, respectively, for HRQoL (measured using SF-12 version 2) in terms of physical component summary score (PCS) and mental component summary score (MCS). SEM was used to simultaneously evaluate the effect of OTC medication use and misuse on associated ADEs and the effect of OTC medication misuse and associated ADEs on HRQoL. **RESULTS:** Of the 153 respondents, 17.8% misused OTC medications and 22.9% experienced ADE due to OTC medications. The SEM best fit model indicated that OTC medication misuse, rather than use, was a significant predictor of experiencing an ADE ( $\beta = 0.2$ ,  $p < 0.05$ ). While OTC medication misuse was not a direct predictor of HRQoL, ADEs associated with OTC medication misuse were responsible for decrease in PCS ( $\beta = -3.8$ ,  $p < 0.01$ ) and MCS ( $\beta = -3$ ,  $p < 0.05$ ). **CONCLUSIONS:** Misuse of OTC medications leads to ADEs. ADEs arising due to OTC medication misuse have the potential to reduce patients' HRQoL. Understanding which OTC medications lead to ADEs and reduction in HRQoL would help improve patient's health.

#### PIH63

##### HEALTH RELATED QUALITY OF LIFE TRAJECTORIES AMONG GENERAL POPULATION IN THE STATE OF PENANG, MALAYSIA USING SF-36V2 HEALTH SURVEY

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**OBJECTIVES:** To describe the quality of life of general population in state of Penang, using SF-36v2 Health Survey. **METHODS:** A cross-sectional study was carried out among 398 residents randomly selected from 10 grids in Penang Island during January 2011 using the official translation of SF-36v2 Health Survey questionnaire in Malay, Mandarin, Tamil and English. SF-36v2 questionnaire consists of eight domains: Physical functioning (PF, 10 items), role-physical (RP, 4 items), role-emotion (RE, 3 items), bodily pain (BP, 2 items), vitality (VT, 4 items), social functioning (SF, 2 items), general health (GH, 5 items) and mental health (MH, 5 items). PF, RF, BP and GH domains reflect physical health whereas VT, SF, RE and MH reveal mental well being. Scoring of questionnaire was done by Scoring software version 4 for SF-36v2. Each domain is scored from 0-100 with higher scores indicating better or good health. Study subjects were also interviewed for socio-demographic information (age, sex, ethnicity, educational level, employment status, monthly income). Respondents having any illness at the time of survey, age less than 18 years and with no formal education were excluded from study. **RESULTS:** Mean ( $\pm$ SD) scores for PF, RF, BP, GH, VT, SF, RE and MH were 81.8 ( $\pm 20.6$ ), 79.5 ( $\pm 21.9$ ), 75.3 ( $\pm 21.3$ ), 65.6 ( $\pm 16.0$ ), 64.3 ( $\pm 20.9$ ), 75.0 ( $\pm 20.4$ ), 73.3 ( $\pm 24.7$ ) and 73.0 ( $\pm 17.1$ ), respectively. These benchmarks are different from those reported for SF-36v1 Health Survey for Malaysian population in 2003. Likewise, these mean scores for SF-36v2 Health Survey are also different from 1998 US general population norms. **CONCLUSIONS:** Since means scores for SF-36v2 health survey were not available for Malaysian population, therefore these findings can serve as a baseline for comparisons in future surveys looking at HRQoL in general and diseased population. However there is need for future studies with a larger sample size representing whole Malaysia.

#### PIH64

##### BURDEN OF 100 DISEASES WITHIN GENERAL PRACTICE: RESULTS OF THE EPI3 PROGRAM

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**OBJECTIVES:** The EPI3 program aims at evaluating the burden of diseases and quality of life (QOL) of patients seeking care for a large variety of conditions within general practice. **METHODS:** GPS included 8559 patients attending the practices. Data on QOL (12-Item Short Form questionnaire) and other individual characteristics were documented by the independent investigators for all participants at the waiting room. Medical information was recorded by GPs. Sampling was calibrated to national standards using the CALMAR weighting procedure. Associations of lower scores (i.e., below vs. above the first quartile) of physical and mental component scores (PCS and MCS) with main diseases and patients characteristics were estimated by multivariate logistic regression. Weighted morbidity rates, PCS and MCS were computed for 100 diagnoses using the international classification of diseases (ICD-9, 9th version). **RESULTS:** Overall mental impairment was observed amongst patients in primary care with an average MCS of 41.5 (SD = 8.6), ranging from 33.0 for depressive disorders to 45.3 for patients exhibiting fractures or sprains. Musculoskeletal diseases were found to have the most pronounced effect on impaired physical health [OR=2.31; 95% CI (2.08–2.57)] with the lowest PCS: 45.6 (SD = 8.8) and ranked first (29.0%) amongst main diagnoses experienced by patients followed by cardiovascular diseases (26.7%), and psychological disorders (22.0%). When combining both prevalence and QOL, musculoskeletal diseases represented the heaviest burden in general practice. **CONCLUSIONS:** Although social and medical determinants of patients' QOL were somewhat similar than those found in previous studies in primary care, the EPI3 program showed more pronounced mental impairment in French patients. This is the first study to provide reference figures for burden of disease in general practice across a wide range of morbidities, particularly valuable for health economics and health care system evaluation.

#### PIH65

##### PSYCHOMETRIC VALIDATION OF THE TUMMY TUCK QUESTIONNAIRE

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**OBJECTIVES:** Patient satisfaction and improved quality of life (QOL) are important considerations determining success in cosmetic surgery. For patients with unwanted skin and excess tissue in their abdomen, abdominoplasty is a viable solution to improve QOL in patients. The objective was to assess the psychometric properties of a new 14-item abdominoplasty measure, the Tummy Tuck Questionnaire (TTQ) which was developed following FDA Guidance to Industry on Patient-Reported Outcomes. **METHODS:** A prospective, controlled, randomized study of 40 patients was conducted to compare the efficacy and safety of ARTISS to standard care in adhering tissue flaps in patients undergoing standard abdominoplasty. Subjects were administered the TTQ at Day 1 post-abdominoplasty surgery and up to 90 days after. The TTQ contains 19 items encompassing four domains: symptoms, physical impact, emotional impact, and satisfaction. Psychometric measurement properties were assessed for construct validity, internal consistency reliability, clinical validity, and responsiveness. **RESULTS:** Thirty-nine subjects participated in this psychometric evaluation (mean age=43.25; female 97.5%). Upon removal of several items, the domains of the TTQ demonstrated acceptable internal consistency (range 0.68 to 0.84). Floor effects were present by Day 3 (postop) on the TTQ Symptoms and Physical Impacts scales and ceiling effects found at Day 3 (postop) on the TTQ Satisfaction. Moderate to high correlations were observed on the QoR-40 Physical, Emotional scales as well as the Numbness and Pain VAS with the TTQ, supporting strong concurrent validity. Clinical validity was observed for patients experiencing hematomas/seromas. By Day 90, subjects in the "Hematoma or Seroma absent" group, on average, had lower scores on the TTQ than subjects in the group experiencing this condition, however this result was not statistically significant. Overall, TTQ was most sensitive to change in the initial days post-surgery. **CONCLUSIONS:** The TTQ demonstrated acceptable reliability and validity and ability to detect change over time.

#### PIH66

##### DO WE NEED A GENDER-SPECIFIC HEALTH RELATED QUALITY OF LIFE –COMORBIDITY INDEX?

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**OBJECTIVES:** Recently, a health related quality of life comorbidity index (HRQoL-CI) was developed to risk adjust SF-12 Physical Component Score (PCS) and Mental Component Score (MCS). HRQoL-CI, however, does not include gender-specific diseases. This study aimed to evaluate the performance of existing HRQoL-CI across gender and if required, revise HRQoL-CI with gender-specific measures. **METHODS:** Using Medical expenditure Panel Survey (MEPS) 2003, the performance of HRQoL-CI was assessed in overall population, and in population stratified by gender, for adults  $\geq 18$  years of age. All the analysis was done using cluster-specific Self-administered Questionnaire weights. The Least Square Absolute Shrinkage and Selection Operator (LASSO), with a partition fraction of 0.25, was used to identify best gender-specific predictors for PCS and MCS. Results compared using graphical di-

agnostic plots. **RESULTS:** The overall population included an estimated sample of 102.71 million males and 110.63 million females. Bivariate t-test showed gender was statistically significantly different for PCS ( $p < 0.001$ ) and MCS ( $p < 0.001$ ). After including age, race and HRQoL-CI, the gender was not statistically significantly different for PCS ( $p = 0.5266$ ) but was for MCS ( $p < 0.0001$ ). However, model performance varied across males and females compared to overall sample. For PCS,  $R^2 = 0.3055$  for overall population, 0.3306 among females and 0.2761 among males; for MCS,  $R^2 = 0.1269$  for overall population, 0.1341 among females and 0.1108 among males. In comparison to 20 diseases in HRQoL-CI, the LASSO analysis gave 6 best predictor for females ( $R^2 = 0.2814$ ) and 2 for males ( $R^2 = 0.1591$ ) for PCS. For MCS, it identified 2 best predictors for males and females ( $R^2 = 0.0823$ ), in comparison to 15 diseases in HRQoL-CI. Inclusion of gender-specific diseases did not improve the model performance. **CONCLUSIONS:** The study suggests that extent of risk adjustment for HRQoL varies across gender and the contribution of the gender-specific variables was minimal for risk adjustment purposes.

#### PIH67

##### ASSOCIATIONS BETWEEN WELLNESS COACHING AND CHANGES IN HEALTH-RELATED QUALITY OF LIFE

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**OBJECTIVES:** Association between completion of wellness coaching and changes in health-related quality of life was assessed. **METHODS:** Data from health risk assessment (HRA) and eligibility files for employees and spouses covered in a private insurance plan for a large state university were analysed. Sample inclusion criteria were completion of HRA and being  $\geq 18$  y/o. Individuals who completed wellness coaching were matched to those who did not on age and chronic conditions. Exclusion criteria were any missing SF-8 score, pregnancy, or change from initial status in presence or absence of any of fourteen diseases including heart failure. Propensity scores for coaching participation adjusted for selection bias. Analysis of Covariance (ANCOVA) assessed association between completion of at least one wellness program (a single variable) and one-year change in SF-8 physical (PCS) and mental component (MCS) summary scores. Other ANCOVA models assessed association between summative effects of various types of coaching (variables for each program type) and change in PCS and MCS scores. Ordered logistic models analysed change in the non-continuous SF-8 individual domain scores. Predictor variables in all models were coaching status, age, wage, staff position, BMI, days missed at work, propensity scores, baseline SF-8 score and a variable for matched case-control pairs. **RESULTS:** The sample contained 3033 individuals, 50% administrative personnel, 62% under age 50 years, and 37% males. No association was detected between completion of at least one coaching program and changes in PCS or MCS scores. But, coaching was associated with increased social functioning domain scores. The model for summative effect of specific coaching types revealed participants in nutrition coaching had more positive change in MCS scores, but participants in stress management coaching had more negative change in MCS scores. **CONCLUSIONS:** Findings were mixed on association between coaching and changes in health related-quality of life.

#### PIH68

##### QUALITY OF LIFE AND SOCIAL SUPPORT AMONG COLLEGE STUDENTS IN VENEZUELA

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**OBJECTIVES:** To describe quality of life (QoL) of college students in Venezuela and to explore the association between quality of life and perceived social support. **METHODS:** One hundred thirty-six students from the Colleges of Pharmacy and Architecture of Central University of Venezuela were surveyed using a questionnaire that included Spanish versions of EQ-5D descriptive system, EQ visual analogue scale (EQ-VAS), SF 36, and Interpersonal Support Evaluation List. The associations among QoL and social support measures were estimated computing Pearson's correlation coefficients. **RESULTS:** The sample consisted of 76 pharmacy students and 60 architecture students. The mean age was 20.01 years. Ninety-three students (68.9%) were females. Concerning the EQ-5D, fewer students reported some problems with mobility (8.8%), and self-care (5.9%). Thirty-six students (26.5%) reported some problems with usual activity. Students reported more problems with pain (41.9%) and anxiety (37.5% reported some problems and 4.4% reported extreme problems). Mean rate of own health on EQ-VAS was 76.75 (SD 16.42). Concerning the SF 36 dimensions, students scored higher in health concepts closely related with physical health (Physical Function = 93.18 (SD 9.4); Bodily Pain = 74.01 (SD 21.7) and scored lower in role-emotional (53.73, SD = 40.0) and vitality (56.07, SD = 20.8). Social support measures showed that the sample as a whole perceived themselves to be relatively well-supported with means (SD) of 80.21 (13.37) for appraisal, 78.90 (11.03) for emotional, 78.17(13.90) for tangible. All social support measures were significantly positively correlated with the EQ-VAS and with all the SF-36 scales. **CONCLUSIONS:** Although, the cross-sectional design of the study does not allow us to draw conclusions regarding the direction of the relationships or causality, this exploratory study demonstrates that all dimensions of QoL are associated to perceive social support. Psychosocial support may offer one way to improve the quality of life of young populations.

#### PIH69

##### WILLINGNESS TO PAY FOR VASOMOTOR SYMPTOMS TREATMENT IN KOREA

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**OBJECTIVES:** The aim of this study was to evaluate the inherent value of Vasomotor symptoms (VMS) treatment. **METHODS:** The nationwide, cross-sectional, face

to face survey was conducted on 1500 menopausal women above the age of 40. Through 3 times of bidding games, the respondent completed the interview for their willingness to pay (WTP) for VMS treatment regarding a specific amount of money to return to the patient's pre-VMS health status. The starting bids were 10,000 KRW, 30,000 KRW, 50,000 KRW, and 100,000 KRW. Following the bidding games, the respondent was asked an open ended question directly asking them to provide their maximum WTP. **RESULTS:** Among 1500 respondents who completed the questionnaire, the perimenopausal women were 987 (65.8%), the early postmenopausal women were 295 (19.7%), late postmenopausal women were 116 (7.7%), and surgical menopausal women were 102 (6.8%). Currently, the respondents' monthly cost for their VMS management was 55,621 KRW. It included complementary and alternative medical cost, as well as direct medical cost. Maximum WTP throughout the open ended question was 43,463 KRW per month. It included only treatment cost. The current monthly cost for VMS management was associated with WTP. The current consumption below 30,000 KRW group replied their WTP as 35,357 KRW. On the other hands, the current consumption above 100,000 KRW group replied their WTP as 96,351 KRW. ( $p < 0.05$ ) The menopausal stage and the family income level were also associated with WTP. But it was not statistically significant. **CONCLUSIONS:** It was shown that the WTP for VMS treatment was above the treatment costs associated with hormone replacement therapy (HRT), the most widely used drugs to alleviate VMS. (The monthly cost of HRT was about 7832 KRW.) \*1 USD=1127 KRW.

#### INDIVIDUAL'S HEALTH – Health Care Use & Policy Studies

#### PIH70

##### IS PRIMARY CARE ACCESSIBLE FOR THE POOR IN MONGOLIA?

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**OBJECTIVES:** The Health Sector Master Plan for 2005-2015 stresses the need to provide essential health services to the people of Mongolia, with emphasis on the elderly, adolescents and the poor. Exploring of potential factors encountered by disadvantaged groups when seeking primary care is increasingly needed. **METHODS:** Five hundred individuals were involved in the quantitative survey and 74 family doctors, nurses, social workers and heads of administrative units of the selected districts to participate in the qualitative surveys. **RESULTS:** A total of 55.6% of the respondents expressed that they are able to obtain health care services when required, 26.6% said sometimes they are not able to obtain it and 12.6% said no. The main reasons for not being able to obtain necessary health care services were poor living conditions, lack of money to get treated (20.4%), some tests and screening cannot be performed at family clinics (16.2%), poor service quality, insufficient family practitioners' knowledge and skills (8.6), family clinic is located far away (5.0%). **CONCLUSIONS:** The majority of the respondents urge that skilled physicians and nurses, medical supplies and equipment, comfortable environment and friendly communication are very influential in family clinic health care and service. They were also pressed out ways to bring family clinic's service closer to the population by improving of quality of service at family clinics and involving of health volunteers in service provision.

#### PIH71

##### BARRIERS INFLUENCING CONTRACEPTIVE USE AMONG STUDENTS IN SECOND CYCLE INSTITUTIONS IN THE BEKWAI MUNICIPALITY, ASHANTI REGION, GHANA

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**OBJECTIVES:** To examine barriers influencing contraceptive use among students in the second cycle institutions. **METHODS:** A survey involving the use of structured questionnaire was conducted with 391 randomly female adolescent students aged 18 years or more in 2011 in two selected cycle institutions in Bekwai Municipality, Ashanti Region, Ghana. Interviewed was held after by respondents signed informed consent. The study was cleared by institutional reviewed board of the Kwame Nkrumah University of Science and Technology, Kumasi. Multivariate analysis was done to assess the strengths of association between background, product characteristics and socio-cultural factors on contraceptive use at 95% confidence interval and 5% significance. **RESULTS:** The results showed that the background, product and socio-cultural characteristics significantly increased the likelihood (odds) of use of contraceptives of the students. The interaction between the background characteristics and product factors could explain only 6.0% ( $R^2 = 0.06$ ) of the likelihood of the use of contraceptives among the students, though not statistically significant ( $p = 0.67$ ). A similar trend was observed in model 3 with the interaction of the three key variables: background, product and socio-cultural characteristics,  $R^2 = 0.17$  at  $p = 0.39$ . Out of the 391, 39% were in a relationship, of this, close to 40% (39.6%) had ever been denied contraceptive services with reasons of being too young and in school 86.9%, fear of side effect, 8.2% and wearing a school uniform 1.6%. Service was sought from pharmacy stores 65.5%, private hospitals, 11.5%, health centres, and from public health facility being less than 10%. **CONCLUSIONS:** About 4 in 10 had ever been denied contraceptive services on the grounds of being students or wearing school uniform and too being young. Generally, background, product and socio-cultural characteristics were the main barriers identified with contraceptives use among female students in second cycle schools.